

In the Claims:

Please amend claims 1, 2, 7, 12, 13, 15, 19-21, 24, 29, 31, 39, 40, 46-48, 51-61, 64, 67, 68, 70, 73-77, 79, 80, 82, 83, 86-88, and 90 of the prior Application No. 08/839,161. A full set of pending claims 1-25 and 29-90 is included for the convenience of the Examiner.

- Sub 61
1. (TWICE AMENDED) A system ^{including} ~~supporting~~ a sash that is laterally removable from between opposed window jambs, the system ^{further} comprising:
- a. a pair of sash support arms ^{piv.ally} [pivotally] mounted [respectively] to hang freely downward on respective opposite stiles of the sash and to pivot [freely between inwardly dependent positions that the support arms assume when not supporting the sash and outwardly extended] from downwardly hanging positions to outwardly extended positions that the support arms assume when supporting the sash;
- b. the sash support arms in the [inwardly dependent] downwardly hanging positions being disposed so that as the sash is lowered toward a supported position, the downwardly hanging arms engage [for engaging] sash supporting platforms of counterbalanced sash shoes locked into the jambs [as a sash is lowered toward a supported position between a pair of counterbalanced shoes locked in the jambs] so that sash-lowering engagement between the arms and the platforms pivots the arms outward along the platforms; and
- c. outer end regions of the sash support arms in the outwardly extended positions resting on [the shoes in positions] regions of the platforms spaced from the sash and arranged vertically under counterbalance elements connected to the shoes to support the weight of the sash.
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2. (TWICE AMENDED) The system of claim 1 wherein the sash supporting platforms of the shoes extend toward the sash stiles so that inner regions of the platforms engage the sash support arms in the [inwardly dependent] downwardly hanging positions and so that outer regions of the platforms engage the outer end regions of the sash support arms in the outwardly extended positions.

3. The system of claim 2 wherein the counterbalance elements are connected to the shoes in regions vertically above the outer platform regions.

4. The system of claim 1 wherein the shoes include locking elements deployable to lock the shoes to jamb projections during removal and replacement of the sash.

5. The system of claim 4 wherein the locking elements are pivotally mounted on the shoes and latched in undeployed positions out of engagement with window jambs.

6. The system of claim 4 wherein the locking elements are formed as extruded metal hooks.

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7. (TWICE AMENDED) The system of claim 1 wherein the shoes and the sash support arms are each formed of metal extrusions having evenly extending profiles.

8. The system of claim 7 wherein the shoes are available in different widths formed as different predetermined lengths of the shoe extrusion so that different widths of shoes fit different widths of jamb channels.

9. The system of claim 8 wherein shoes of different widths are adapted to connect to different numbers of counterbalance elements.

10. The system of claim 7 wherein the extrusions for the sash support arms are available in different lengths to fit different jamb dimensions.

11. The system of claim 10 wherein the different length sash support arms have extruded code lines indicating size.

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12. (TWICE AMENDED) In a system counterbalancing a window sash supported by a pair of counterbalanced sash shoes so that the sash extends between a pair of jambs from which the sash is removable by maneuvering the sash upward and laterally while the shoes are locked in the jambs, the improvement comprising:

- a. the shoes being formed of a metal extrusion having a predetermined evenly extending profile establishing an elevational configuration of the shoes; and
- b. the [profile configuring an upper region of the shoes interconnected] elevational configuration extending integrally between an upper region formed to interconnect with counterbalance elements and a lower region forming a platform extending toward the sash from directly below the upper region.; and]
- [c. the profile configuring a lower region of the shoes for supporting the sash.]

13. (TWICE AMENDED) The improvement of claim 12 wherein the sash is supported on the shoes by sash support arms formed of a metal extrusion having an evenly extending profile.

14. The improvement of claim 13 wherein the sash support arms are movably mounted on the sash to rest on the shoes in outwardly extending positions of the sash support arms located vertically below the upper region interconnected with the counterbalance elements.

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15. (TWICE AMENDED) The improvement of claim 13 wherein the sash support arms are mounted on the sash to pivot between outwardly extending positions supporting the sash and [inwardly dependent] downwardly hanging positions that the support arms assume when not supporting the sash.

16. The improvement of claim 12 wherein the shoes include locking elements that engage jamb projections to lock the shoes during sash removal and replacement.

17. The improvement of claim 16 wherein the locking elements are formed of a metal extrusion and are pivotally mounted on the shoes.

18. The improvement of claim 16 wherein the locking elements are formed as hooks that catch on the jamb projections and the shoes have latches that latch the locking elements in undeployed positions out of engagement with window jambs.

19. (TWICE AMENDED) The improvement of claim 12 wherein the [profile configures] elevational configuration of a mid-region of the [shoes] shoe is formed to support [guides] a guide that [slide] slides in [the jambs] a jamb to guide vertical movement of the [shoes] shoe.

20. (TWICE AMENDED) The improvement of claim 19 wherein the profile configures a guide retaining groove that receives the [guides] guide.

21. (TWICE AMENDED) The improvement of claim 20 wherein the profile configures a latch retaining groove for receiving a hook [latches] latch and a pin groove for receiving [pins] a pivot pin of the shoe [hooks] hook.

22. The improvement of claim 12 wherein the shoes are formed of predeterminedly variable lengths of the extrusion to form shoes of different widths fitting different sizes of jamb channels.

23. The improvement of claim 22 wherein shoes of different widths have upper regions adapted to interconnect to different numbers of counterbalance elements.

24. (TWICE AMENDED) The improvement of claim 13 wherein different metal extrusions having different evenly extending profile lengths form sash support arms available in different lengths to accommodate different distances between opposite shoes.

25. The improvement of claim 24 wherein the different lengths of sash support arms have extruded code lines indicating size.

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29. (TWICE AMENDED) A counterbalance sash shoe comprising:

- a. a metal extrusion having a predetermined, evenly extending profile establishing an elevational configuration of the shoe;
- b. the [profile configuring] elevational configuration extending integrally downward from an upper region of the shoe formed to interconnect with a counterbalance to
- [c. the profile configuring] a lower region of the shoe formed as a platform to support a sash; and
- [d.] c. the shoe having a width established by a predetermined length of the extrusion.

30. The shoe of claim 29 including a locking hook mounted on the shoe and deployable to an operative position in which the hook hangs downward from the shoe.

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31. (TWICE AMENDED) The shoe of claim 30 wherein the hook is formed of a metal extrusion having an evenly extending profile.

32. The shoe of claim 30 including a spring latch for retaining the hook in an inoperative position in which the hook does not hang downward from the shoe.

33. The shoe of claim 32 wherein the hook is manually movable to a latched engagement with the spring latch and is unlatched from the spring latch by pressing between ends of the hook and the spring latch.

34. The shoe of claim 30 wherein the profile configures a pin groove for receiving a pin for pivoting the hook and a spring groove for retaining the spring latch.

35. The shoe of claim 29 including a guide mounted on the shoe between the platform and the upper region, the guide being formed of resin material.

36. The shoe of claim 35 wherein the profile configures a mid-region of the shoe to have an interlock for holding the guide.

37. The shoe of claim 29 wherein the shoe is available in different widths set by different predetermined lengths of the extrusion to fit different sizes of jamb channels.

38. The shoe of claim 37 wherein the upper regions of shoes of different widths are adapted to connect to different numbers of counterbalance elements.

39. (TWICE AMENDED) A sash support system comprising:
- a. a plurality of sash support elements each formed of a metal extrusion having [a] an evenly extending profile establishing an elevational configuration of the element;
 - b. [a profile] the elevational configuration of a first one of the extruded elements integrally forming a shoe having an upper region engaging a counterbalance and a lower region supporting a sash; and
 - c. [a profile] the elevational configuration of a second one of the extruded elements integrally forming a sash support arm connected to a stile of the sash to engage the sash [support] supporting region of the shoe.

40. (TWICE AMENDED) The system of claim 39 wherein [a profile] the elevational configuration of a third one of the extruded elements forms a shoe lock connected to [a] the lower region of the shoe to be movable between deployed and undeployed positions.

41. The system of claim 40 wherein the shoe profile configures a pin groove for receiving a pivot pin supporting the shoe lock.

42. The system of claim 40 including a resilient latch mounted on the shoe for retaining the shoe lock in the undeployed position.

43. The system of claim 42 wherein the shoe lock and the latch are configured so that the shoe lock is manually latchable and unlatchable.

44. The system of claim 40 wherein the shoe lock is pivotally movable between the deployed and undeployed positions and is downwardly dependent from the shoe in the deployed position.

45. The system of claim 39 including a resin guide mounted on the shoe.

sub 61 / 46. (TWICE AMENDED) The system of claim 45 wherein the [shoe profile configures] elevational configuration of a mid-region of the shoe is formed with a locking slot for receiving the resin guide.

c10 47. (TWICE AMENDED) The system of claim 39 wherein the sash support arm is pivotally mounted on the sash stile to move between an outwardly extending position supporting the sash and a downwardly [dependent] hanging position that the support arm assumes when not supporting the sash.

48. (TWICE AMENDED) The system of claim 47 wherein the sash support arm braces against a mounting bracket limiting movement of the sash support arm beyond the outwardly extending and downwardly [dependent] hanging positions.

49. The system of claim 39 wherein the shoe is available in different widths established by different predetermined lengths of the first extruded element to accommodate different widths of jamb shoe channels.

50. The system of claim 49 wherein upper regions of different shoe widths are adapted for connecting to different numbers of counterbalance elements.

sub 61 / c11 51. (TWICE AMENDED) The system of claim 39 wherein the sash support arm is available from a plurality of extrusions having different evenly extending profiles establishing different lengths for the support arm.

52. (TWICE AMENDED) The system of claim 51 wherein the plurality of extrusions for the sash support arm are formed with evenly extending code lines indicating different arm lengths.

53. (TWICE AMENDED) A sash support comprising:
- a. sash support arms ^{pivotal} movably mounted respectively on each stile of ~~the~~ sash so that the support arms hang downward in dependent positions when not supporting the sash and move outward to braced positions in response to [supporting weight of the sash] engagement of the support arms with locked sash shoes as the sash is lowered between the shoes so that the weight of the lowered sash urges the sash support arms outward on the shoes to the braced positions; and
 - b. the support arms in the braced positions having end regions resting on respective sash shoes in support regions vertically under upper shoe regions where counterbalance elements are connected to the sash shoes.

54. (TWICE AMENDED) The support of claim 53 wherein mounting brackets pivotally mount the support arms on the sash stiles and limit movement of the support arms [between] beyond the [dependent] downwardly hanging and braced positions.

55. (TWICE AMENDED) The support of claim 60 wherein [a] the profile of the extrusion for the shoes forms the upper regions connected to counterbalance elements vertically above support regions engaging end regions of the braced support arms.

56. (TWICE AMENDED) The support of claim 55 wherein the support regions of the shoes extend toward the sash stiles to engage the support arms in their [dependent] downwardly hanging positions when the sash is lowered into engagement with the shoes.

57. (TWICE AMENDED) The support of claim 56 wherein the support arms move from their downwardly [dependent] hanging positions to their outward braced positions by sliding along the support regions of the shoes as the sash is lowered.

58. (TWICE AMENDED) The support of claim 53 wherein the sash support arms are formed of a metal extrusion having an evenly extending profile.

59. (TWICE AMENDED) The support of claim 58 wherein a plurality of extrusions for the support arms have different evenly extending profiles establishing different arm lengths and are provided with extruded coding lines indicating support arm length.

60. (TWICE AMENDED) The support of claim 53 wherein the shoes are formed of a metal extrusion having an evenly extending profile.

61. (TWICE AMENDED) A system ^{including a pair of} ~~locking~~ counterbalance shoes ^{engaging} to window jambs while a sash supported on the shoes is removed from between the window jambs, the system ^{further} comprising:

- a. the shoes having hooks that are pivotally mounted on lower regions of the shoes to move between latched and unlatched positions;
- b. the hooks in unlatched positions [being dependent] hanging dependently downward from the shoes to engage the jambs and hook under lances formed in the jambs as the shoes rise; and
- c. the hooks in latched positions being retained out of engagement with the jambs and clear of the lances.

62. The system of claim 61 wherein resilient latches are carried on the shoes for holding the hooks in the latched positions.

63. The system of claim 62 wherein the hooks are manually movable into the latched positions and are released from the latched positions by pressing between ends of the hook and the latch.

64. (TWICE AMENDED) The system of claim 61 wherein the hooks and the shoes are each formed of metal extrusions having evenly extending profiles.

65. The system of claim 64 wherein the shoes have extrusion-formed grooves that receive pivot pins supporting the hooks.

66. The system of claim 65 wherein the shoes have extrusion-formed slots that retain resilient latches for holding the hooks in the latched positions.

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67. (TWICE AMENDED) A system supporting a sash that is laterally removable from between opposed window jambs and is supported on counterbalanced shoes that run vertically within the jambs and are separated sufficiently to allow lateral movement of the sash, the system ^{without} comprising:

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- a. the shoes having platforms that extend toward the sash to support the sash;
 - b. the sash having a support arm secured to each sash stile so that the sash support arms hang downward in positions in which lower ends of the support arms engage sash end regions of the shoe platforms when the sash and the support arms are moved downward from above the shoe platforms;
 - c. the sash support arms being ^{pivotal} mounted on the sash to pivot between the [downward] downwardly hanging positions and outwardly extending positions in which the sash support arms engage jamb end regions of the shoe platforms [to transfer the sash weight to the shoes] as weight of the downwardly moved sash transfers to the shoes via the support arms; and
 - d. counterbalance elements exerting a lifting force on the shoes in regions vertically above the jamb end regions of the shoe platforms engaged by the sash support arms in the outwardly extending positions.

68. (TWICE AMENDED) The system of claim 67 wherein the [ends of the support arms slide over steps in the] shoe platforms are configured with steps that the ends of the support arms slide downward over as the support arms move from the sash end regions to the jamb end regions of the shoe platforms.

69. The system of claim 67 wherein the sash support arms are braced against movement beyond the downward hanging positions and the outwardly extending positions.

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70. (TWICE AMENDED) The system of claim 67 wherein the sash support arms are formed of a metal extrusion having an evenly extending profile.

71. The system of claim 70 wherein the extrusions are available in different profiles forming support arms of different lengths to accommodate the sash to different window dimensions.

72. The system of claim 71 wherein extrusions of different profiles are formed with coding lines to indicate the different lengths of the sash support arms.

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73. (TWICE AMENDED) The system of claim 67 wherein the shoes are formed of a metal extrusion having an evenly extending profile.

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74. (TWICE AMENDED) A system counterbalancing a laterally removable sash supported by counterbalanced sash shoes respectively running vertically in opposed jambs arranged along opposite stiles of the sash, the system comprising:

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- a. [movable] support arms extending between the sash and sash shoes biased upward at lifting regions spaced from each sash stile, the support arms being arranged for transferring the weight of the sash to the shoes at support regions vertically below the lifting regions and thereby minimizing any moment arm tending to turn the shoes around a horizontal axis; and
 - b. the support arms being movable to downwardly hanging positions to allow [upward and lateral] movement of the sash upward and laterally from the shoes without interference between the support arms and the lifting regions [so that the sash can be withdrawn from the jambs when the weight of the sash is lifted from the shoes].

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75. (TWICE AMENDED) The system of claim 74 wherein the support arms are braced in support positions transferring the weight of the sash to the support regions of the shoes, and the support arms otherwise hang [dependently] downward when not transferring sash weight to the shoes.

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76. (TWICE AMENDED) The system of claim 74 wherein the shoes are formed of a metal extrusion having an evenly extending profile.

77. (TWICE AMENDED) The system of claim 74 wherein the sash support arms are formed of a metal extrusion having an evenly extending profile.

78. The system of claim 77 wherein the extrusions are available in different profiles forming support arms of different lengths to accommodate the sash to different window dimensions.

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79. (TWICE AMENDED) The system of claim 74 wherein the shoes have platforms extending from the support regions toward the sash to engage support arms hanging [dependently] downward from a sash being lowered onto the shoes.

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80. (TWICE AMENDED) A system supporting a sash that runs vertically within an opposed pair of window jambs containing counterbalance sash shoes, the sash being movable laterally of the jambs for withdrawing the sash from between the jambs, and the system comprising:

- a. a pair of movable support arms engaging the sash and the counterbalance shoes and arranged for transferring the weight of the sash to support regions of the counterbalance shoes;
- b. the counterbalance shoes being biased upward at lifting regions arranged vertically above the support regions to minimize any moment arms tending to turn the shoes around horizontal axes; and
- c. the support arms being movable to allow [upward and lateral movement of] the sash to move upwardly and laterally of the shoes in a region between the lifting regions when the sash is lifted to remove its weight from the support regions.

81. The system of claim 80 wherein the support arms move in response to being subjected and not subjected to sash weight.

82. (TWICE AMENDED) The system of claim 80 wherein the shoes are formed of a metal extrusion having an evenly extending profile.

83. (TWICE AMENDED) The system of claim 80 wherein the sash support arms are formed of a metal extrusion having an evenly extending profile.

84. The system of claim 83 wherein a plurality of extrusions are available in different lengths to form support arms that can bridge different distances between stiles of the sash and the support regions.

85. The system of claim 80 wherein the support arms move inwardly toward the sash when the sash is lifted from the shoes.

86. (TWICE AMENDED) A system ^{including} supporting a sash that is laterally removable from between opposed window jambs, the system including counterbalance shoes arranged within the jambs to be spaced laterally from stile edges of the sash to allow lateral movement of the sash for removing the sash from between the jambs, and the system ^{further} comprising:

- a. sash support arms ^{pivotaly mounted} arranged ^{for} bridging distances between the shoes and stiles of the sash, the support arms being ^{pivotaly mounted} movable between sash supporting positions in which the support arms transfer weight of the sash to the shoes and sash uplifted positions in which the support arms hang ^{dependently} downward from the sash stiles and allow lateral movement of the sash between the shoes;
- b. counterbalance lifting regions for the shoes being arranged vertically above support regions that uphold the weight of the sash transferred via the support arms to the shoes so that the sash weight does not subject the sash shoes to moment arms tending to turn the sash shoes about horizontal axes; and
- c. the sash support arms in the support positions being braced against moving in response to sash weight.